

PATENT SPECIFICATION

200,027

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COMPLETE SPECIFICATION.

Improvements in and relating to Water and Wind Wheels.

We, HENRY ROBERT SOLINGER and ERNEST GEORGE MESSER, both citizens of the United States of America, and both of Elma, County of Grays Harbor, Washington, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to water and wind wheels. Water and wind wheels have been formed previously by securing helical blades of the same pitch and depth to a number of cylindrical shafts connected together by universal joints and connected to a driven member by bevel gearing. It has also been suggested to secure separate blades of increasing size to conical or tapered sleeves, or to secure helical blades of the same depth and pitch to a cone, the blades extending along the whole length of the cone.

According to the present invention helical blades of gradually increasing depth extend along the whole length of a conical body. A number of such conical bodies, each increased in size and on which the number of blades is increased according to the size of the body may be arranged in succession according to size and connected together in the known manner by universal joints.

In the drawings:—

Figure 1 is a view showing a plurality of power wheels coupled together, and located in a stream of water showing the shaft of one of the wheels provided with a bevel gear, whereby power may be transmitted to other sources;

Figure 2 is a longitudinal sectional view through one of the wheels;

Figure 3 is a view showing a single power wheel located in a stream of water; and

Figure 4 is an end view of Figure 3.

[Price 1/-]

Referring to the drawings, 1 designates a suitable frame, which is constructed of any suitable material preferably angle iron, bars and the like, and which is built on the bed of a stream of water. In fact, suitable foundations of masonry or stone work 2 are constructed on the bed of the stream, and mounted upon the stone work are the frames 1, in bearings 3 of which the shafts 4 of the power wheels are mounted. The shafts are coupled together by universal joints 5, thereby enabling the shafts to be arranged at angles to each other, in order to conform to the contour of the stream, and yet permit the wheels to rotate.

It will be noted that the bodies 6 of the various wheels are conical, enabling the water to very easily pass between the various helical blades 7, which are brazed, welded or spot welded as at 8 to the bodies. Obviously, the larger the bodies, the more blades. However, for illustrative purposes, it will be noted that one wheel has two blades, while the others have three and four blades. In this instance, the body of the wheel which has two blades is relatively smaller, while the bodies of the other two wheels are increased in size. In fact the body which has the four blades is the largest of the series illustrated, while the body which has three blades is the size intermediate the largest and the smallest.

It will be noted that the bodies of the various wheels may be constructed airtight, or open, or solid, preferably airtight and hollow.

One end of one of the shafts nearest the bank of the stream is provided with a bevel gear 9, which meshes with a similar gear 10, which is carried by a countershaft 11, from which power may be transmitted to any suitable location, for operating various machinery, or to

which a pump may be attached, for
pumping or lifting water for irrigation
and other purposes. Obviously a single
wheel of the present character may be
5 used on windmills, for imparting power
to the pump or rod. It will be noted
that by provision of a device of this kind,
no lost motion or back pressure exist,
and when the body is constructed air-
10 tight and conical, the wheel has the
advantage of others in that its pulling
power is equal throughout the length of
the wheel, which is rotated with greater
ease since the stream of water may easily
15 conform to and pass over the tapered sur-
face of the body and between the various
blades.

Having now particularly described and
ascertained the nature of our said inven-
20 tion and in what manner the same is to
be performed, we declare that what we
claim is:—

1. In water and wind wheel apparatus

wherein blades are secured to a conical
body adapted to transmit power, the con- 25
struction in which a number of helical
blades of gradually increasing depth
extend along the whole length of the
conical body, substantially as described.

2. In water and wind wheel apparatus 30
the construction wherein a number of
conical bodies according to Claim 1, each
increased in size and on which the num-
ber of helical blades is increased accord-
ing to the size of the conical body, are 35
arranged in succession according to size
and connected together by universal
joints, substantially as described.

3. Water and wind wheels constructed
and adapted for use as a whole, substan- 40
tially as described in connection with the
accompanying drawing.

Dated this 20th day of November, 1922.

HY. FAIRBROTHER,
Chartered Patent Agent, 45
30 and 32, Ludgate Hill, London, E.C. 4.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

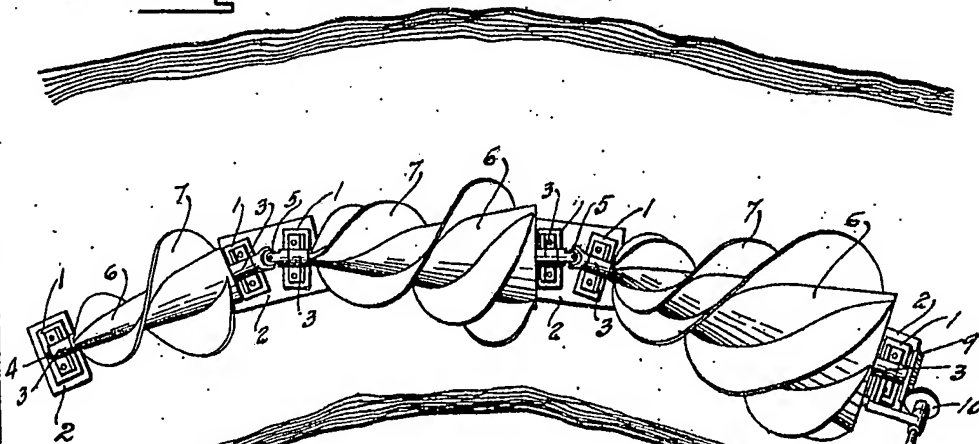


Fig. 2.

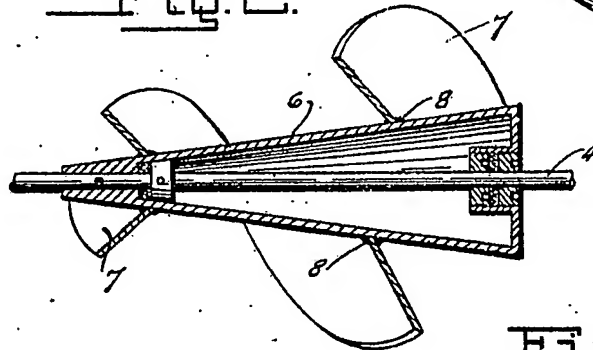


Fig. 3.

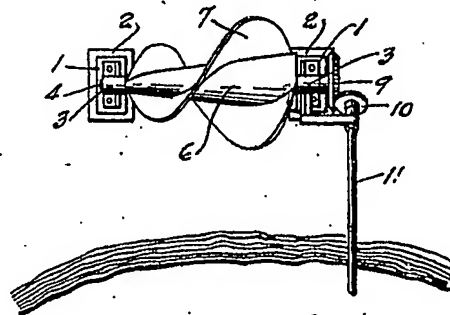


Fig. 4.

